

CLAIMS

1. A network element apparatus to which a unique global address is assigned in a global network, and which is
5 connected to a single router, and makes a roaming connection to other network contained in the global network, the apparatus comprising:

an access section that gains access to said other network by using a temporarily assigned global address
10 which is a different global address from the unique global address;

a generating section that generates a message which contains the unique global address, the temporarily assigned global address, and a global address of the router
15 and indicates a location of the network element apparatus in the global network; and

a transmitting section that transmits the generated message to other network element apparatus in said other network.

20

2. The network element apparatus according to claim 1, wherein a part containing the global address of the router in the message contains:

a type field indicating whether the global address
25 of the router is contained in the message or not;

a length field indicating a data length of the part;
and

an access router address field indicating the global address of the router.

3. The network element apparatus according to claim 5 1, wherein the message is an advertisement message in IPv6, and a part containing the global address of the router in the message contains: a type field indicating whether the unique global address of the network element apparatus is contained in the message or not;
- 10 a length field indicating a data length of the part; and
- an access router address field indicating the unique global address of the network element apparatus.

- 15 4. The network element apparatus according to claim 1, wherein information related to reception or rejection of the last transmitted message is contained in a reply of said other network element in response to the last transmitted message, and the next transmitted message 20 contains the information related to the reception or the rejection, and information which notifies that said other network element apparatus is able to take action to handle the message.

- 25 5. A network element apparatus comprising:
- a receiving section that receives the message from a network element apparatus according to claim 1; and

a recording section that records an entry containing a home address field indicating the unique global address, a care-of-address field indicating the temporarily assigned global address, and an access router address field indicating the global address of the router in a corresponding manner with the received message.

6. The network element apparatus according to claim 5, wherein updating of the entry sets, in a case where the received message contains the global address of the router, the access router address field of the entry using this address, and sets, in a case where the received message does not contain the global address of the router, the access router address field of the entry to be invalid.

15

7. The network element apparatus according to claim 6, wherein, a routing header is added by the router to a data packet received by said receiving section, the routing header being used to instruct the network element to which destination is indicated with a termination address specified in the data packet to forward the data packet to another destination, containing the global address of the final destination of the data packet.

25 8. The network element apparatus according to claim 5, wherein a determination is made on a verification of whether a source address specified in a data packet received

by said receiving section is authentic or not by using information related to an address which is the global address of the router contained in the data packet and which is a different address from the source address,
5 the source address, an entry in the home address field, a care-of-address in the entry, and an access router address field of the entry.

9. A roaming connection method used in a network element
10 apparatus to which a unique global address is assigned in a global network, and which is connected to a single router, and makes a roaming connection to other network contained in the global network, the method comprising the steps of:

15 gaining access to said other network by using a temporarily assigned global address which is a different global address from the unique global address;

generating a message which contains the unique global address, the temporarily assigned global address,
20 and a global address of the router and indicates a location of the network element apparatus in the global network; and

transmitting the generated message to other network element apparatus in said other network.

25